CLAIMS

The embodiments of the invention in which an exclusive property or right is claimed are defined as follows:

1. A sensor comprising:

a silicon substrate of a first conductivity type;

a layer of silicon of a second conductivity type formed on said silicon substrate;

an insulation layer within said layer of silicon and dividing said layer of silicon into an upper layer and a lower layer;

a plurality of resistors formed in said upper layer of silicon and interconnected into a bridge arrangement, said bridge arrangement having an output;

means for connecting a first voltage to said bridge arrangement; and

means for connecting a second voltage to said lower layer of silicon, with a value of said second voltage being selected to reduce power up drift.

2. Sensor of claim 1 wherein said plurality of piezoresistors form a Wheatstone bridge having a top, a bottom, and a midpoint, with said first voltage being applied at said top and said bottom of said bridge and said second voltage being approximately equal to a voltage at said midpoint of said bridge.

3. Sensor of claim 1 wherein said second voltage is determined as a function of an observed drift when said second voltage is equal to said first voltage and the observed drift when said second voltage is equal to ground.

4. Sensor of claim 3 wherein said second voltage is determined by multiplying said first voltage by $\left(1-\frac{|PUD@V_{bridge}|}{|PUD@V_{bridge}|+|PUD@ground|}\right)$

wherein $|PUD @ V_{bridge}|$ = the observed drift when said second voltage is equal to said first voltage; and $|PUD @ ground|$ = the observed drift when said second voltage is equal to ground.

5. Sensor of claim 1 wherein said second voltage is equal to said first voltage times the quantity of one minus the ratio of a first value of a drift with said second layer connected to said first voltage, divided by the sum of said first value and a second value of a drift with said second layer connected to ground.

6. Sensor of claim 1 wherein said second voltage has a high state during a first period of time equal to said first voltage and a low state during a second period of time equal to ground with the ratio of said first period of time to a total cycle time equal to one minus the ratio of a first value of drift with said second voltage at a high level divided by the sum of said first value of drift plus a second value of drift with said second voltage at ground.

7. Sensor of claim 1 further comprising a resistor voltage divider having said first voltage as an input and said second voltage as an output.

8. A sensor comprising:

a first layer of a semiconductor material;

an insulation layer formed on said first layer;

a second layer of a semiconductor material formed on said insulation layer;

a plurality of resistors formed in said second layer of semiconductor material and interconnected into a bridge arrangement having an output;

means for connecting a first voltage to said bridge arrangement; and

means for connecting a second voltage to said first layer with a value of said second voltage being selected to reduce power up drift in said output during a period of time immediately following connection of said first voltage.